



King County

Department of Natural Resources and Parks
Wastewater Treatment Division

FALL
2002

Water Reuse Program UPDATE

Sammamish Valley Reclaimed Water Production Facility

Plans are under way to build a reclaimed water production facility in the Sammamish Valley. Throughout the summer irrigation season, this facility will produce about 1.5 million gallons of reclaimed water to irrigate nearby farms and recreational facilities.



Reclaimed water in the Sammamish Valley:

- Provides an alternative water source for agricultural and recreational open-space users in the Sammamish Valley.
- Helps salmon and other wildlife by keeping more water in the Sammamish River.
- Preserves the rural character of the valley by providing water for farms and open space recreation.
- Demonstrates new technologies that show how this new water supply could be tapped in other parts of the county.

The King County Wastewater Treatment Division will design the facility to fit in with the rural landscape of the valley. It will use advanced technologies for treating the water, providing high-level treatment from a compact facility. State-of-the-art odor control technologies will be used in the facility. It will be built with the goal of using as many "green building practices" as are cost-effective and make sense. The facility will include a landscape of native plants and an orchard.

Reclaimed water will preserve the rural character of the valley by providing an alternative water source for farms and open space recreation.

WHAT IS RECLAIMED WATER?

Standard wastewater treatment cleans water to a point that the treated water can be safely returned to the Puget Sound. Reclaimed water is more highly treated. It gets advanced treatments such as further filtering and disinfecting. Reclaimed water can be used safely for almost everything but drinking and must meet Class A standards of the Washington State departments of Health and Ecology.

SAMMAMISH VALLEY RECLAIMED WATER PRODUCTION FACILITY

WHY THE SAMMAMISH VALLEY?

In 2000, King County asked for nominations of locations that would be suitable for using large quantities of reclaimed water. The Sammamish Valley emerged as the top area with many water users interested in using reclaimed water for irrigation. Switching to reclaimed water for irrigation will allow the equivalent amount of water to stay in groundwater or the river.

THE LOCATION

King County staff and a consultant team identified and analyzed all possible sites in the Sammamish Valley that meet these criteria:

- near future customers
- close to the wastewater supply
- owned by King County or are easily acquirable
- compatible with the site's current use (avoiding a zoning or land-use change)
- not endangering any threatened or endangered species or cultural resources
- relatively easy to permit
- able to handle expansion to meet future Sammamish Valley reclaimed-water needs.

THE SCHEDULE		
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Site selection and design	Permitting and construction	Reclaimed water available late summer

SIXTY ACRES PARK SOUTH

Of the six sites analyzed, the site at Sixty Acres Park, south of 116th at 15000 NE 116th Street, has been identified as the most feasible location for this facility. The park is used by dog groups, Scouts, and model airplane and rocket enthusiasts. The broad expanse of undeveloped field makes this park a rare piece of property with lots of open space. This site is one of the only parks in King County where some of these interests can engage in their activities. By nestling the facility in the southwest corner of the park, this park can continue providing recreational opportunities for these groups. Communication is taking place with users of the park and neighbors to incorporate their suggestions and needs to make sure the facility works for them.



PUBLIC COMMENT

King County is seeking public comment throughout the process. The facility's neighbors and recreation groups that use the park are especially involved in providing feedback. The community has given many suggestions for the facility. We have heard that the public wants the facility to



- fit in with the character of the Sammamish Valley.
- not emit odor or noise.
- be attractive.
- not displace current recreational users.
- not cause traffic disruption.

SUSTAINABLE OR "GREEN" BUILDING FEATURES

This facility will incorporate a number of environmentally responsible features. The LEED™, Leadership in Energy and Environmental Design, rating system has been designed to measure the environmentally sustainable features of a building. Here are environmentally friendly features we hope to include:

- efficient energy use
- water conservation
- building with sustainably-harvested wood and recycled materials
- protection of natural features on the site
- porous surfaces for the parking lot.

HOW THIS FACILITY WILL BE DIFFERENT FROM CONVENTIONAL WASTEWATER TREATMENT

There are many differences between this reclaimed water production facility and a conventional wastewater treatment plant.



- **Size**—This facility will require less than four acres. The advanced technology being used will convert screened sewage to treated wastewater in a single process. This eliminates the need for separate primary, secondary and advanced facilities.
- **No solids will be treated**—Wastewater will be drawn from the large underground sewer pipe that runs under the Sammamish River Trail. Solids will remain in the pipe and be transported to one of the regional treatment plants. Because solids will not be treated at this site, one source of odor at conventional treatment plants will be eliminated.
- **Advanced treatment**—Water will be treated to advanced levels that are safe for irrigation.

ADVANCED TECHNOLOGY

To decide on what technology to choose for this facility, King County developed a pilot project that evaluated and tested eight emerging technologies for high-quality reclaimed-water production. Detailed information about the tests is available at <http://dnr.metrokc.gov/WTD/reuse/> or by calling 206-296-8361.

As a result of this pilot project, King County has chosen a state-of-the-art technology called a membrane bioreactor for the Sammamish Facility. This technology is widely used in cleaning drinking water. Pore size of the membranes is so small that extremely small solids including most microorganisms are removed. The membranes are submerged in an aerated tank, and water is drawn through the membrane with a low-pressure vacuum, leaving the solids in the aeration tank. This system converts screened wastewater to highly treated reclaimed water in a single process.

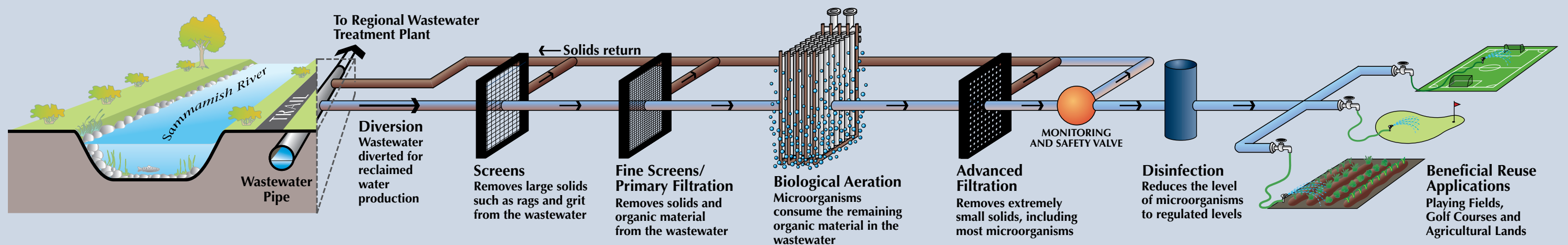
THE FACILITY AS A GOOD NEIGHBOR

As we listened to people at our community open houses and briefings, we heard the following concerns: Will this facility affect my property value? Will it smell? Will it be noisy?

Our goal is for this facility to be an award-winning building that fits in with the valley's unique character. Producing reclaimed water will help preserve the agricultural and recreational uses of the valley. Here are facts that address common concerns:

- **State of the art odor control**—Treatment processes will be covered within a building, so the odors will be contained. Any odors will be "scrubbed," treated through advanced treatment processes, before entering the atmosphere. This facility will be

SATELLITE RECLAIMED WATER PRODUCTION FACILITY: TREATMENT PROCESS



continued from other side

a national model for odor control. It will use the latest and best technology available.

- **Noise impacts**—Operation of this facility will not produce much noise. Any noise will be contained within enclosed structures. This facility will meet all local noise code requirements.
- **Traffic impacts**—Because this is a small-scale facility that will not handle solids, traffic impacts once the facility is in operation will be minimal after operation begins.
- **Coordination with transportation projects**—A road-widening and bridge replacement is already in the works on Northeast 116th Street. The project is expected to begin construction in 2003. We have asked to take over the parking lot portion of the bridge project to have one integrated project, not two separate projects that may affect the usability of the park and the view from neighboring homes. A second bridge replacement is scheduled for Northeast 124th Street in 2004. We plan to include pipe on both of the bridges for carrying reclaimed water to customers.

WHERE DO WE GO FROM HERE?

Public comment on design and the appearance of the Sammamish Valley reclaimed water production facility is now under way. The public will be asked to identify critical elements and make suggestions on design criteria.

RECLAIMED WATER SOURCES AS WE PLAN FOR THE FUTURE

Reclaimed water is one solution for the complex problems facing the Sammamish River and the fish, wildlife and people who depend on it. Use of reclaimed water will reduce water withdrawals from the Sammamish River and wells that feed the river now used for irrigation by farms and recreational interests with water rights. More water in the river will be great for salmon and people. Because reclaimed water is perfectly suited for irrigation, the long-term goals will be to replace more of the water withdrawals with reclaimed water. This model project will give us the experience to do so.

BE PART OF THE PROCESS

For more information and to be involved in the process, please contact Jo Sullivan at 206-296-8361 or e-mail her at jo.sullivan@metrokc.gov, or call Tom Fox at 206-296-5279 or e-mail him at tom.fox@metrokc.gov. Further information is also at <http://dnr.metrokc.gov/WTD/reuse>.



King County, working in your neighborhood to protect water quality and the environment.

For more information:

Visit our Web site: <http://dnr.metrokc.gov/wtd/reuse>

Or write:

Department of Natural Resources and Parks
Wastewater Treatment Division, Attn: Jo Sullivan
King Street Center, 201 S. Jackson St., Suite 703
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This information will be available in alternative formats for people with disabilities upon request.